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Receipt

CIS-057

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Duda et al

Serial No. 09/273,806

Filed: March 22, 1999

For: A Method And Apparatus & Computer Program Product For Borrowed-Virtual-Time Scheduling

Art Unit: 2751

Examiner:

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CERTIFICATE OF MAILING

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Dear Sir:

We enclose, a copy of the filing receipt for United States Patent Application No. 09/273,806 with the changes noted thereon. Please make the neccesary corrections and return to us a corrected filing receipt. Please see title page; this is a PTO error, and therefore no fees are required.

Respectfully submitted,

Dated: 7-2-99

Steven A. Swernofsky
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certif correction

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APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/273,806	03/22/99	2751	$1,556.00	CIS-057	10	57	3

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Applicant(s)

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TITLE ~~APPARATUS~~
METHOD, APPARATSUS & COMPUTER PROGRAM PRODUCT FOR BORROWED-VIRTUAL-TIME SCHEDULING

PRELIMINARY CLASS: 711

DATA ENTRY BY: MONROE, BEULAH TEAM: 04 DATE: 06/22/99

(see reverse)

A

METHOD, APPARATUS & COMPUTER PROGRAM PRODUCT FOR BORROWED-VIRTUAL-TIME SCHEDULING

Background of the Invention

Field of the Invention

This invention relates to the field of scheduling electronic and computer resources.

Background

There are many circumstances where a resource is shared between elements. For example, the resources of a computer system are shared by the programs executing in the computer system. In a computer system, one particular example of a shared resource is the time available to the processor that executes programs stored in the computer's memory. This resource (the processor time) is allocated to elements in the computer system (threads-of-execution) that use the processor time.

Another example of a shared resource occurs in an output-queued data switch. Such a switch dispatches data received from an input port to a queue associated with the destination output port. The queue then feeds the output port. There can be a number of queues for each output port. The shared resource is the amount of time each queue (an element) has access to the output port. In other words, the shared resource is the output port's bandwidth.

In both of these cases (and many others), the available time of the resource is shared between multiple elements under control of a scheduling mechanism that implements a scheduling algorithm. The scheduling mechanism can include programmed processes that are executed by a processor to effect a scheduling algorithm, circuitry that effectuates a scheduling algorithm, or other known mechanisms. In addition, the scheduling mechanism may be preemptive or non-preemptive. In the case of a computer system, a preemptively